

Liverpool John Moores University

Title: Manufacturing Technology
Status: Definitive
Code: **5503ENGICA** (119154)
Version Start Date: 01-08-2018

Owning School/Faculty: Engineering
Teaching School/Faculty: HICOM University College Sdn,Bhd

Team	Leader
Russell English	

Academic Level: FHEQ5 **Credit Value:** 20 **Total Delivered Hours:** 50
Total Learning Hours: 200 **Private Study:** 150

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	36
Practical	4
Tutorial	8

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1		20	
Exam	Exam		60	2
Report	AS2		20	

Aims

To provide an introduction to manufacturing technologies and to give an understanding and practical experience of the techniques used in modern manufacturing industries.

Learning Outcomes

After completing the module the student should be able to:

- 1 Select suitable processes and techniques for generating geometrical forms for a given component specification
- 2 Discuss the characteristics of a range of machine tools and select suitable machines and techniques for a given component specification
- 3 Demonstrate an understanding of the basic elements of machine design and control

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Laboratory based assignment	1	3	
Examination	1	2	3
Laboratory based assignment	2	3	

Outline Syllabus

*Introduction to casting processes: fluid flow and solidification. Mould design.
Prevention of casting defects. Developments in casting processes.
Bulk deformation processes: forging, rolling, extrusion, drawing.
Sheet metal working processes: shearing, bending, punching
Design differences between conventional and CNC machine tools, classification of CNC machine tools, economic benefits of CNC
Modern developments in metal cutting processes: grinding theory and practice, high speed machining, hard turning.
Machine tool control: practical aspects of control
Application of adaptive control to machining processes
Introduction to non-conventional machining*

Learning Activities

Combination of lectures, tutorials, and laboratory work

Course Material	Book
Author	Kalpakjian, S; Schmid, S.
Publishing Year	2008
Title	Manufacturing Processes for Engineering Materials
Subtitle	
Edition	5th
Publisher	Pearson
ISBN	9780132272711

Course Material	Book
Author	Malkin,S; Guo, C.
Publishing Year	2004
Title	Grinding Technology: Theory and Applications of Machining with Abrasives
Subtitle	
Edition	2nd
Publisher	Ellis Horwood
ISBN	9780831132477

Notes

This module allows the student to study modern manufacturing processes to a depth which provides an understanding of the techniques employed in the manufacturing industries.